



St Mary's R.C. Primary

Design & Technology Progression Map and End Points



Design is a tool that allows us to reach out and inspire, to touch others and help make lives magic and wonderful

— Marcel Wanders —

St Mary's R.C Primary

DT Curriculum Progression and End Points

	End of EYFS		End of Lower KS2	End of Upper KS2
To master practical skills	<p>Food</p> <ul style="list-style-type: none"> • Cut, peel or mix ingredients safely • With support measure ingredients • Mix or assemble ingredients. <p>Materials</p> <ul style="list-style-type: none"> • Cut materials safely using tools provided under supervision • Develop a range of cutting and shaping techniques (such as tearing, cutting, and folding) • Develop a range of joining techniques (such as gluing, sticking or combining materials to strengthen). <p>Textiles</p> <ul style="list-style-type: none"> • Shape textiles using templates. • Join textiles using glue, staples • Decorate textiles through sticking on other materials <p>Electricals and Electronics</p> <ul style="list-style-type: none"> • Explore products that use a battery to produce sounds/lights <p>Computing</p> <ul style="list-style-type: none"> • Explore creating a design using software. <p>Construction</p> <ul style="list-style-type: none"> • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. <p>Mechanics</p> <p>Create a product that uses a slider</p>	<p>Food</p> <ul style="list-style-type: none"> • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients. <p>Materials</p> <ul style="list-style-type: none"> • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). <p>Textiles</p> <ul style="list-style-type: none"> • Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). <p>Electricals and Electronics</p> <ul style="list-style-type: none"> • Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). <p>Computing</p> <ul style="list-style-type: none"> • Model designs using software. <p>Construction</p> <ul style="list-style-type: none"> • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. <p>Mechanics</p> <ul style="list-style-type: none"> • Create products using levers, wheels and winding mechanisms. 	<p>Food</p> <ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). <p>Materials</p> <ul style="list-style-type: none"> • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques. <p>Textiles</p> <ul style="list-style-type: none"> • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles. <p>Electricals and Electronics</p> <ul style="list-style-type: none"> • Create series and parallel circuits. <p>Computing</p> <ul style="list-style-type: none"> • Control and monitor models using software designed for this purpose. <p>Construction</p> <ul style="list-style-type: none"> • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. <p>Mechanics</p> <ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). 	<p>Food</p> <ul style="list-style-type: none"> • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures. <p>Materials</p> <ul style="list-style-type: none"> • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). <p>Textiles</p> <ul style="list-style-type: none"> • Create objects (such as a cushion) that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). <p>Electricals and Electronics</p> <ul style="list-style-type: none"> • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). <p>Computing</p> <ul style="list-style-type: none"> • Write code to control and monitor models or products. <p>Construction</p> <ul style="list-style-type: none"> • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). <p>Mechanics</p> <ul style="list-style-type: none"> • Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs.

To design, make, evaluate and improve	Design, make and evaluate a simple product	<ul style="list-style-type: none"> • Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Use software to design. 	<ul style="list-style-type: none"> • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. • Use apps to design and represent product designs. 	<ul style="list-style-type: none"> • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
To take inspiration from design throughout history	Explore a range of objects to identify likes and dislikes	<ul style="list-style-type: none"> • Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created. 	<ul style="list-style-type: none"> • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work. 	<ul style="list-style-type: none"> • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.

End Points in Learning in the Design and Technology Curriculum

Year 1	Year 2	Year 3
<ul style="list-style-type: none"> • Pupils can design and make products that solve real and relevant problems within a variety of contexts. • Pupils can consider their own and others' needs, wants and values when considering design criteria. • Pupils can generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups. • Pupils can use and apply mathematics, science, computing and art through DT. • Pupils can learn how to take calculated risks in designing stage. • Pupils can evaluate a range of existing products. • Pupils can select from and use a range of tools and equipment to perform practical tasks. • Pupils can select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics • Pupils can explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. • Pupils can evaluate and test their ideas and products against a design criteria. • Pupils can understand the basic principles of a healthy diet and prepare a healthy dish. • Pupils understand where food has come from. 	<ul style="list-style-type: none"> • Pupils can design and make products that solve real and relevant problems within a variety of contexts. • Pupils can consider their own and others' needs, wants and values when considering design criteria. • Pupils can generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups. • Pupils can use and apply mathematics, science, computing and art through DT. • Pupils can learn how to take calculated risks in designing stage. • Pupils can evaluate a range of existing products. • Pupils can build structures, exploring how they can be made stronger, stiffer and more stable • Pupils can select from and use a range of tools and equipment to perform practical tasks. • Pupils can select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics • Pupils can evaluate and test their ideas and products against a design criteria. • Pupils can understand the basic principles of a healthy diet and prepare a dish. • Pupils understand where food has come from. 	<ul style="list-style-type: none"> • Pupils can use creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts. • Pupils can generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams. • Pupils can acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art during the design process. • Pupils can learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. They can investigate and analyse a range of existing products. • Pupils can select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. • Pupils can select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties and aesthetic qualities • Pupils can understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Pupils can critique, evaluate and test their ideas and products and the work of others. • Pupils can evaluate and test their ideas and products against a design criteria.

Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Pupils can use creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts. • Pupils can generate develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams. • Pupils can investigate and analyse a range of existing products. • Pupils can acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art during the design process. • Pupils can learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. • Pupils can select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • Pupils can select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • Pupils can apply their understanding of how to strengthen, stiffen and reinforce more complex structures. • Pupils can critique, evaluate and test their ideas and products and the work of others. • Pupils can evaluate and test their ideas and products against a design criteria. • Pupils can prepare and cook a range of savoury dishes using a range of cooking techniques. • Pupils can understand the principles of a healthy diet. • Pupils can understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 	<ul style="list-style-type: none"> • Pupils can use creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. • Pupils can generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design. • Pupils can investigate and analyse a range of existing products. • Pupils can acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art in the design process. • Pupils can select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. • Pupils can select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties and aesthetic qualities. • Pupils can through the evaluation of past and present design and technology develop a critical understanding of its impact on daily life and the wider world. • Pupils can critique, evaluate and test their ideas and products and the work of others effectively. • Pupils can evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. • Pupils can build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users. • Pupils can use increasingly complex mechanical systems in their designs. • Pupils can understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. • Pupils can apply their understanding of computing to program, monitor and control their products. • Pupils can understand and apply the principles of nutrition and learn how to cook using a range of cooking techniques. 	<ul style="list-style-type: none"> • Pupils can prepare and cook a range of savoury dishes using a range of cooking techniques. • Pupils can understand the principles of a healthy diet. <ul style="list-style-type: none"> • Pupils can use creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. • Pupils can acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art in the design process. • Pupils can generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Pupils can investigate and analyse a range of existing products. • Pupils can through the evaluation of past and present design and technology develop a critical understanding of its impact on daily life and the wider world. • Pupils can evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. • Pupils can select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. • Pupils can select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties and aesthetic qualities. • Pupils can understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. • Pupils can critique, evaluate and test their ideas and products and the work of others effectively. • Pupils can build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users. • Pupils can use increasingly complex mechanical systems in their designs. • Pupils can understand how key events and individuals in design and technology have helped shape the world. • Pupils can understand and apply the principles of nutrition and learn how to cook using a range of cooking techniques. • Pupils can prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. • Pupils can understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

